

# Data Sheet for Middle Motor Torque Sensor MMTS100



# Technical Specification

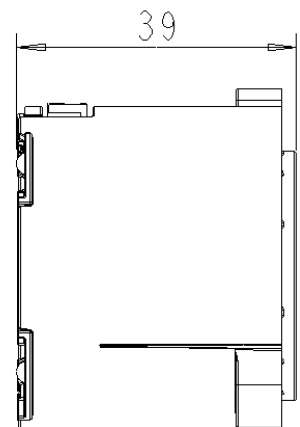
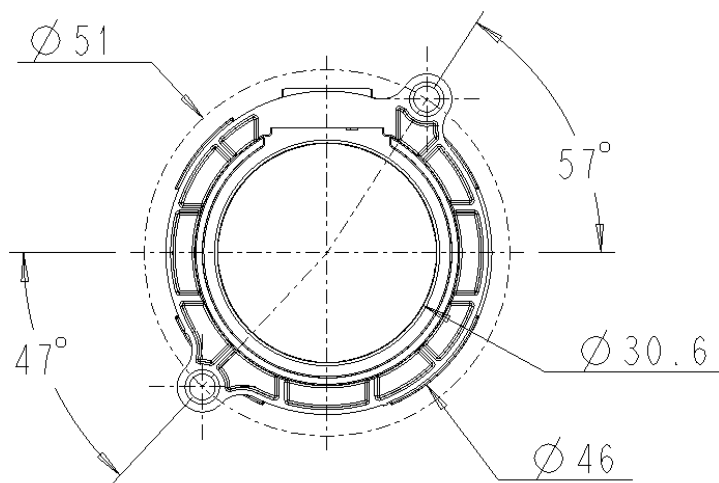
## Middle Motor Torque Sensor

- Torque range 0 to 100Nm\*
- Accuracy:  $\pm 3\%$  FS
- Double sided measurement (torque from left and right pedal)

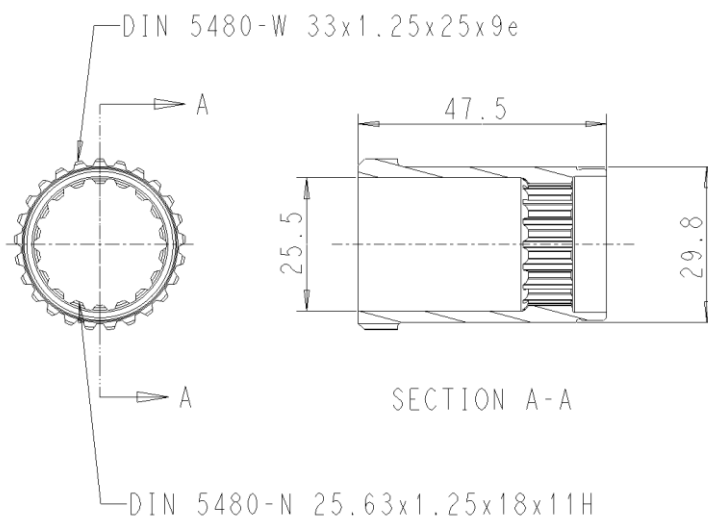
\*different customized torque ranges possible

## Overall Dimensions (mm)

Sensor Unit:



Shaft:



For calibration, the shaft is required. The sensor can either be delivered with shaft provided by Methode or free issued by the customer.



Sensor with Methode shaft

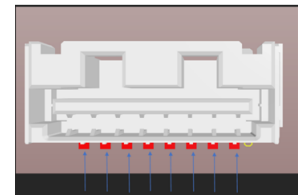


Sensor without Methode shaft, shaft free issued by customer (customer design)

### Sensor Variants and Specifications

Analogue:

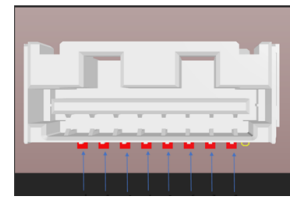
Parameter	Values	Notes
Measurement range	0 - 100Nm	
Offset	0.5V	Can be adjusted in SW
Sensitivity	40mV/Nm	Can be adjusted in SW
Cadence signal	50/50 square wave	
Cadence resolution	96 pulses/rev	
Interface connector	Molex 5023820872	
Power supply	5V +/- 0.25	Tolerance need to be tested, depends on accuracy needed, we can add supply voltage compensation for high tolerance
Operating temperature	-40°C to 85°C	



Pin	Designation
1	ANA_OUT
2	GND
3	Torque_DGN
4	I2C_SDA
5	I2C_SCL
6	ENCA
7	ENCB
8	VCC_5V

Digital:

Parameter	Values	Notes
Measurement range	0 - 100Nm	
Offset	0bit	Can be adjusted in SW
Sensitivity	100 bits/Nm	Can be adjusted in SW
Cadence signal	50/50 square wave	
Cadence resolution	96 pulses/rev	
Interface connector	Molex 5023820872	
Power supply	5V +/- 0.25	Tolerance need to be tested, depends on accuracy needed, we can add supply voltage compensation for high tolerance
Operating temperature	-40°C to 85°C	



Pin	Designation
1	SPI_CS
2	GND
3	SPI_MISO
4	SPI_MOSI
5	SPI_CLK
6	ENCA
7	ENCB
8	VCC_5V

## Order Options

MMTS (±3% Accuracy FS)					
Measurement Range [Nm]					
100*	incl. calibration				
Speed Sensor					
1	With Speed Sensor				
Output Signal					
D1	Digital Output SPI				
A1	Analogue with 0...5V				
Supply Voltage					
V1	3.3V				
V2	5V				
MMTS	100	1	D1	V1	Configuration Example

E.g.

MMTS-100-1-D1-V1

\*different customized torque ranges possible